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BULLETIN

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MICROTHERM THERMAL INSULATION

Background. Microtherm insulation is being marketed by Micropore Insulation, Ltd., of Wirral, Merseyside, UK. The insulation has been used successfully for many years. The manufacturer has introduced a new product – Microtherm MPS, a molded pipe section available as half shells for small-diameter pipes and as segments for large-diameter pipes.

Description. Microtherm MPS is molded with a normal thickness of 25 mm and a length of 500 mm to suit standard pipe diameters. However, nonstandard diameters and special wall thicknesses can be produced to order.

The principal constituents of Microtherm MPS are microporous silicas, ceramic fibers, and ceramic opacifiers which are mixed and bonded to form a shaped-block material. Microtherm MPS is safe to handle, and there are no health hazards known to be associated with its use. Microtherm contains no asbestos.

Independent tests give the following figures, which indicate that all types of Microtherm MPS may be used satisfactorily in contact with stainless steel. (It is widely used on the stainless steel pipework of the cooling circuits of nuclear reactors.) Summary of results for tests, conducted in accordance with the RDTM12-ITMIL-1-24244A(SHIPS), is:

Leachable (Cl + F) content.....55 ppm
Leachable (Na + SiO_3) content.....4000 ppm

Microtherm MPS contains no organic components and is combustible with zero flame spread. However, there may be organic combustible materials in surface coatings when they are applied.

Water damages Microtherm MPS, and pipe sections must be protected from it; however, sections can be supplied with a water-resistant coating. The coating is effective for shedding water but will not withstand full immersion and it does not remain showerproof at high temperatures (above 150°C). If the Microtherm MPS is to be fitted on pipework exposed to the weather and the pipe temperatures are higher than 150°C then full water protection must be provided by a cladding system. Most purpose-made pipe insulation coatings of resin, bitumen, etc., can be applied to Microtherm MPS, but for full integrity of sealing it will be necessary to wrap on a skin of glass cloth, plastic, or other commonly used covering material before the final weather seal mastic is applied.

Figure 1 illustrates the relative difference between Microtherm MPS and conventional insulation for the same thermal conductivity properties. Figure 2 displays thermal conductivity comparisons between Microtherm MPS and conventional insulation materials.

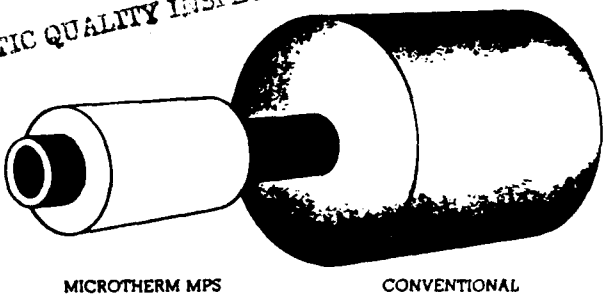

Figure 1. Thickness required for same thermal conductivity properties.

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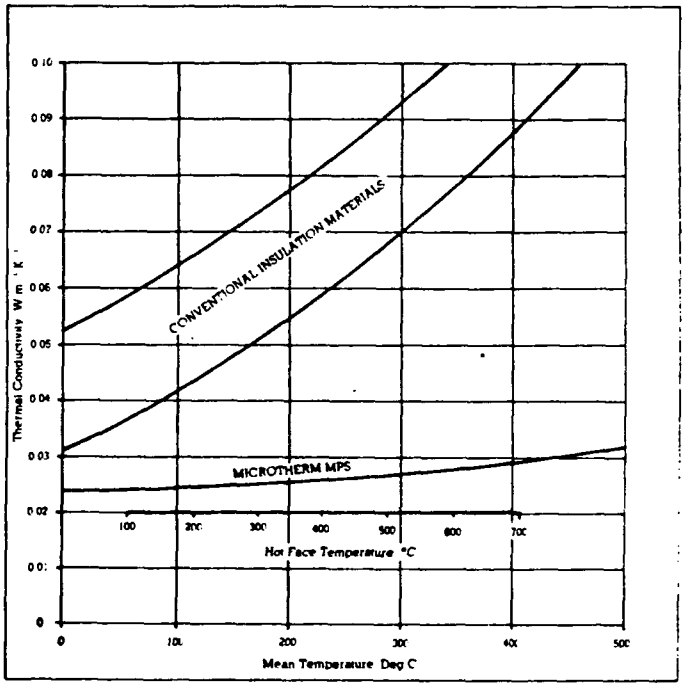

Figure 2. Thermal Conductivity Values.